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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,281	07/17/2006	Seiichiro Yamamoto	47233-5002-00 (216113)	1577

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EXAMINER	
COLEMAN, RYAN L	

ART UNIT	PAPER NUMBER
1714	

NOTIFICATION DATE	DELIVERY MODE
11/15/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DBRIPDocket@dbr.com
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Office Action Summary	Application No. 10/551,281	Applicant(s) YAMAMOTO ET AL.	
	Examiner RYAN COLEMAN	Art Unit 1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 October 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 11-22 is/are pending in the application.
- 4a) Of the above claim(s) 3-6 and 11-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 8, 2010 has been entered. Claims 1-6 and 11-22 are pending, and claims 3-6 and 11-22 have been withdrawn from consideration.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1 and 2 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,235,147 to Lee et al. (hereafter referred to as "Lee").

6. With regard to claim 1, Lee teaches a method of discharging solid semiconductor wafer contaminants from the inside of a treatment bath (item 10 in Figure 10; reads on *container*; Col. 1, 8-12; Col. 4, 17-22; Col. 5, 14-37; Col. 7, 4-12; Col. 9, 39-45). As taught by Lee, a liquid chemical (reads on *discharging liquid*) is supplied to the bath through a nozzle (item 21 in Figure 10) that is located in the vicinity of the bath's bottom such that a spiral flow of liquid chemical and solid contaminants (reads on *solid matter*) is generated within the bath and discharged through a discharge port in the bath's bottom (Col. 4, 17-22; Col. 5, 14-37; Col. 7, 4-12; Col. 9, 39-45). Lee does not explicitly teach that *most* of the solid contaminants in the spiral flow of liquid chemical are discharged from the bath, but since Lee teaches that the solid contaminants are entrained in a spiral flow of liquid chemical that is discharged out of the bath's discharge

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port, it is reasonably expected that most of the solid contaminants in the spiral flow of liquid chemical are discharged from the bath's discharge port.

7. With regard to claim 2, as shown in Figure 10, the bottom nozzle that is labeled by numeral 21 is located in the vicinity of the bath's bottom. Lee teaches having the nozzle 21 discharge liquid chemical in a tangential direction such that the nozzle generates a spiral flow of liquid (Col. 5, 14-37; Figure 8).

Response to Arguments

8. Applicant's arguments filed October 8, 2010 have been fully considered but they are not persuasive.

9. Applicant argues that applying the Lee reference as prior art is inappropriate because Lee doesn't teach storing the wafer contaminants in the treatment bath, whereas claim 1 specifies that the solid matter is "stored" in a container. However, in the method of Lee, before the wafer contaminants are discharged from the bath's discharge port, the wafer contaminants are contained within the bath, and therefore, in the method of Lee, the wafer contaminants are considered to be "stored" within the bath before they are discharged from the bath's discharge port. Similarly, applicant argues that in the method of Lee, the liquid chemical is not stored within the bath. Firstly, applicant's claims don't actually specify that discharging liquid is stored within the container, and secondly, in the method of Lee, since the liquid chemical is contained within the bath before getting discharged through the bath's discharging port, the liquid chemical can be considered to be "stored" within the bath before getting discharged.

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10. Applicant argues that since Lee teaches having solid matter such as wafers, a wafer guide, and a chemical spray part within the bath, "most" of the solid matter in the bath cannot be considered to be discharged from the bath when the wafer contaminants are discharged from the bath. However, in the examiner's rejection of claim 1, the examiner states that solid contaminants in the spiral flow of liquid chemical is what reads on applicant's *solid matter* – not objects such as the wafers, a wafer guide, and a chemical spray part.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RYAN COLEMAN whose telephone number is (571)270-7376. The examiner can normally be reached on Monday-Friday, 9-5.

12. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Kornakov can be reached on (571)272-1303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/RLC/

Ryan L. Coleman

Patent Examiner, Art Unit 1714

November 5, 2010

/Michael Kornakov/

Supervisory Patent Examiner, Art Unit 1714